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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,507	05/31/2001	Landon B. Vines	US018074/ID780243	3093

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EXAMINER

BERRY, WILLIE WENDELL JR

ART UNIT	PAPER NUMBER
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3723

DATE MAILED: 02/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/871,507

Applicant(s)

VINES ET AL. 

Examiner

Willie Berry, Jr.

Art Unit

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>Z</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osterheld et al.

Osterheld discloses a method for clearing slurry from a polishing pad comprising: placing a wafer substrate (column 7, lines 42-45), rotating a polishing pad (column 7, lines 45-47), dispensing deionized water slurry from the dispense bar (column 7, lines 49-54), spraying a high pressure fluid to remove slurry from between the wafer substrate and the pad with high pressure dispense bar (column 7, lines 57-66), a pressure spray range (column 10, lines 5-7), a rotating pad speed range (column 8, lines 55-59) a splash guard (column 2, lines 43-47), a second slurry dispense portion (column 2, lines 37-40), a second wafer carrier (column 8, lines 22-25), and an inherent control device.

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Osterheld does not disclose the steps of terminating the slurry dispense, the specific pressure of the spray, and specific speed of the pad.

The steps of terminating the slurry dispense would have been obvious to one having ordinary skill in the art at the time the invention was made, since it is assumed that the slurry would not run indefinitely throughout the polishing of the wafer and at some point in time there would be a step of stopping the dispensing of slurry. The specific ranges of pressure and speed would have been obvious to one having ordinary skill in the art at the time the invention was made, since it has been held that when the general conditions of a claim are disclosed in the prior art, the discovering the optimum or workable ranges involves only routine skill the art. *In re Aller*, 105 USPQ 233.

4. Claims 9-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osterheld et al. in view of EP 0967049.

Osterheld discloses as discussed above.

Osterheld does not disclose rotating the pad at a second speed.

EP' 049 discloses rotating a pad at a second speed in a polishing apparatus for the purpose of cleaning the polishing pad.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Osterheld to include rotating the pad at a second speed as taught by EP' 049 for the purpose of cleaning the polishing pad.

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In regard to claim 13, it is inherent in Osterheld to have a control device that controls the dispense of slurry from the slurry dispense bar at a first time and the dispense of high pressure fluid from the slurry dispense bar at a second time. It would have been obvious to have utilized the control device to control rotational speed of the platen such that it is to rotate at a slower speed at a first time and a second higher speed during the second time in view of EP' 049 so as to facilitate the material removal from the pad.

In regard to claims 10-12 and 14-16, the specific ranges of pressure and speed would have been obvious to one having ordinary skill in the art at the time the invention was made, since it has been held that when the general conditions of a claim are disclosed in the prior art, the discovering the optimum or workable ranges involves only routine skill the art. *In re Aller*, 105 USPQ 233.

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osterheld et al. in view of EP' 049 as applied to claim 18 above, and further in view of Applicant's Admitted Prior Art (APA) of figure 1A.

Osterheld in view of EP' 049 disclose as discussed above.

Osterheld in view of EP' 049 does not disclose the specific location of the slurry dispense bar.

APA discloses the specific location of the slurry dispense bar between two wafer carriers and above a polishing pad in a CMP machine for the purpose of providing slurry to the polishing pad.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Osterheld in view of EP' 049 to include the specific location of the slurry dispense bar as taught by APA for the purpose of substituting one location of the slurry dispense bar for another.

Response to Arguments

6. Applicant's arguments with respect to claims 9-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication from the examiner should be directed to Willie Berry whose telephone number is (703) 308-7467.

WB

Willie Berry, Jr. :wbj
February 4, 2003



Joseph J. Hall, III
Supervisory Patent Examiner
Technology Center 3700